

CLAIMS

1. A CFI-type zeolite characterized in that the atomic ratio of silicon to a heteroatom is 45 or less, and long axes of crystals are 0.7 μm or less.

2. The CFI-type zeolite as described in claim 1 wherein the heteroatom is at least one atom selected from aluminum, gallium, iron, titanium, boron, cobalt, and chromium.

3. A process for preparing the CFI-type zeolite characterized in that the reaction mixture having the following conditions (1) and (2) is subjected to hydrothermal treatment:

(1) $\text{LiOH}/\text{SiO}_2 < 0.15$ (molar ratio)

(2) $\text{ROH}/\text{SiO}_2 > 0.2$ (molar ratio, ROH is an alkylsperminium hydroxide).

4. The process as described in claim 3 wherein the reaction mixture contains a source of silica, a source of the heteroatoms, LiOH, ROH (ROH is an alkylsperminium hydroxide), and water.

5. The process as described in claims 1 or 2 wherein the reaction mixture for synthesizing the zeolite that contains a source of silica, a source of the heteroatoms, LiOH, ROH (ROH is an alkylsperminium hydroxide), and water and have the following conditions (1) and (2) is subjected to the hydrothermal treatment:

(1) $\text{LiOH}/\text{SiO}_2 < 0.15$ (molar ratio)

(2) $\text{ROH/SiO}_2 > 0.2$ (molar ratio).

6. The process as described in claim 3 wherein a source of the heteroatoms is aluminium hydroxide.

7. A catalyst characterized by containing the zeolite as described in claim 1.

8. A catalyst for conversion reaction of aromatic compounds having three or more substituent groups on an aromatic ring, catalyst which is characterized by containing the zeolite as described in claim 1.

9. A catalyst for isomerization reaction of aromatic compounds having three or more substituent groups on an aromatic ring, catalyst which is characterized by containing the zeolite as described in claim 1.

10. The catalyst as described in claims 8 or 9 wherein the aromatic compounds are dihalogenated toluenes, trihalogenated benzenes, and trialkylbenzenes.

11. The catalyst as described in any one of claims 7 to 9 wherein the zeolite is of an acid type.

12. The catalyst as described in any one of claims 7 to 9 characterized by containing rhenium.

13. A process for conversion of organic compounds characterized by allowing the catalyst as described in claim 7 to contact with the organic compounds.

14. A process for the conversion of the organic compounds as described in claim 13 wherein the organic compounds are

aromatic compounds having three or more substituent groups on an aromatic ring.

15. The process for the conversion of the organic compounds as described in claim 14 wherein the conversion reaction is an isomerization reaction.

16. The process for the conversion of the organic compounds as described in claims 14 or 15 wherein the aromatic compounds are dihalogenated toluenes, trihalogenated benzenes, and trialkylbenzenes.

17. The process for the conversion of the organic compounds as described in any one of claims 13 to 15 wherein the conversion is carried out in the coexistence of hydrogen.